

Sub B3
a4

6. (amended) An exhaust passage structure in an outboard engine system in which a catalytic converter (72) for purifying an exhaust gas discharged from a 4-cycle engine (E) is mounted in an exhaust passage for guiding the exhaust gas, [characterized in that] wherein at least a portion of the exhaust passage and an oil pan (41) for storing a lubricating oil for the engine (E) are integrally formed in a case member (41) which is disposed under an engine block (11) to accommodate a drive shaft (50) therein for transmitting a driving force from the engine (E) to a propeller (52); a connection into which said exhaust passage opens is formed in a sidewall of said case member (41); and said catalytic converter (72) is disposed in a space surrounded by said case member (41) and a lid (48) detachably coupled to said connection to permit the exhaust gas to flow.

REMARKS

The Office Action dated October 7, 2002, has been received and carefully noted. The preceding amendments and the following remarks are submitted as a full and complete response thereto. Claims 1, 3 and 6 are amended. No new matter is added. Claims 1-6 are pending in this application and are submitted for consideration.

An objection was made to the Specification for an informality. The Specification is amended herein as suggested in the Office Action. Accordingly, Applicants request that the objection be withdrawn.

An objection was made to the Abstract of the Disclosure for being too long. Applicants submit herewith a replacement Abstract, which complies with the word requirement. Accordingly, Applicants request that the objection be withdrawn.

Claims 1-6 were rejected under 35 U.S.C. § 102(e) as being anticipated by

Kato et al. (U.S. Patent No. 6,053,785, hereinafter, "Kato"). In particular, it was asserted in the Office Action that Figs. 4 and 5 of Kato show each and every element of the claims. Applicants respectfully traverse the rejection and submit that claims 1-6 recite subject matter not shown or described by Kato.

Claim 1, upon which claim 2 depends, defines exhaust passage structure in an outboard engine system. At least a portion of an exhaust passage means is integrally formed in a case member, which has a drive shaft accommodated therein for transmitting a driving force from an engine to a propeller. Openings of the exhaust passage means are defined in a defined in a generally upwardly and downwardly extending sidewall of the case member, which is disposed under an engine block. An exhaust passage forming an exhaust silencing portion is defined between the case member and a lid which is detachably coupled to cover the openings.

Claim 3, upon which claims 4 and 5 depend, defines an exhaust passage structure in an outboard engine system in which a catalytic converter for purifying an exhaust gas discharged from an engine is mounted in an exhaust passage for guiding the exhaust gas. At least a portion of the exhaust passage is integrally formed in a case member, which is disposed under an engine block to accommodate a drive shaft therein for transmitting a driving force from the engine to a propeller. A connection into which the exhaust passage opens is formed in a side wall of the case member. The catalytic converter is disposed in a space surrounded by the case member and a lid, which is detachably coupled to the connection to permit the exhaust gas to flow.

Claim 6 defines an exhaust passage structure in an outboard engine system

in which a catalytic converter for purifying an exhaust gas discharged from a 4-cycle engine is mounted in an exhaust passage for guiding the exhaust gas. At least a portion of the exhaust passage and an oil pan, for storing a lubricating oil for the engine, are integrally formed in a case member, which is disposed under an engine block to accommodate a drive shaft therein for transmitting a driving force from the engine to a propeller. A connection into which the exhaust passage opens is formed in a sidewall of said case member. The catalytic converter is disposed in a space surrounded by the case member and a lid detachably coupled to the connection to permit the exhaust gas to flow.

Kato describes an outboard motor exhaust system that has a number of expansion chambers therein. In its Figs. 4 and 5, an exhaust expansion chamber 78 is shown being formed by an expansion chamber member forming member 79 affixed to the underside of an exhaust guide plate 26, which is separate from the unit 15, so as to be closed at its upper opening, and the member 79 is positioned inside the housing assembly 25 of the unit 15. Kato describes a completely different configuration than that of the claimed invention.

The case member of the claimed invention is disposed below the engine and has openings in a sidewall thereof. These openings are detachably covered with a lid, which forms an exhaust silencing portion. The Office Action asserted that the lower unit housing 15 has an opening 78, that is covered by a lid 26 to form a silencing portion. However, the exhaust guide plate 26 is not a lid, but an integral part of the upper-unit. Furthermore, the alleged opening is in a top portion of the lower unit housing and not in a side wall thereof. Thus, Applicants submit that Kato fails to teach each and every element of claim 1-6, of the present invention.

Referring to the rejection of claim 3, the Office Action states that "a

connection (78) into which the exhaust passage opens is formed in a side wall of the case member (15)" (see last two lines at page 3 of the Office Action). However, reference numeral 78 of Kato designates the expansion chamber and reference numeral 15 refers to a drive shaft housing lower unit 15. As described above, Kato is a completely different configuration than the claimed invention and the Examiner's reasoning is not understood. If the Examiner persists with the contention that Kato shows the elements of the claimed invention, a more thorough and concise explanation of Kato in terms of the present invention is respectfully requested.

Regarding claims 2 and 6, it was asserted in the Office Action that Fig. 4 shows an oil pan 107 integrally formed in the case 15. However, reference number 107 refers to oil tank 107 in Fig. 4. However, the outboard motor of Kato is a two-stroke engine, which naturally, does not have an oil pan like the four-stroke engine of the present invention. Column 8, lines 19-32 describe that oil tank 107 is mounted in the proximity to the starter motor 105, which is mounted on a side of the engine opposite to the fuel vapor separator 63. Clearly, the oil tank 107 is located at a level similar to that of the fuel vapor separator 63 as shown in Fig. 3. Therefore, the estimated position of the oil tank 107 is far above the catalyst bed 83. This, Applicants submit that the oil tank 107 of Kato is located inside an engine room at a position far above catalyst bed 83 and has no oil recovering structure, contrary to the claimed invention.

In contrast to Kato, the oil pan of the claimed invention is integrally formed in a case member which is disposed under the engine block. In a 4-cycle engine, lubricating oil passage structure is provided through which lubricating oil is circulated. The oil circulating system is partly located at a lower portion of the engine in order to enable recovery of the lubricating oil. Therefore, the oil pan of the

claimed invention is capable of oil recovery.

Regarding claim 5, the catalytic converter of Kato appears to be supported by the exhaust guide plate 26, which is not part of the case 15, as required by claim 5.

Regarding claim 6, Kato describes a 2-cycle engine and not a 4-cycle engine, as defined by claim 6.

In view of the above, Applicants submit that claims 1-6 recite subject matter not shown or described by Kato, request that the rejection be withdrawn and that claims 1-6 be allowed.

Claims 1-6 were rejected under 35 U.S.C. § 102(b) as being anticipated by Koishikawa et al. (U.S. Patent No. 5,554,060, hereinafter, "Koishikawa"). In particular, it was asserted in the Office Action that Figs. 1 and 6 of Koishikawa show each and every element of the claims. Applicants respectfully traverse the rejection and submit that claims 1-6 recite subject matter not shown or described by Koishikawa.

First, Applicants note that the rejection is patently unclear and improper. It was asserted that "...a connection (59, 62) into which the exhaust passage opens is formed in a sidewall of the case member (5) ..." However, reference numeral 59 designates an exhaust passage portion defined in the extension portion 14a of oil pan 14. The oil pan 14 is a separate component from case 5. Reference numeral 62 designates an exhaust pipe 62 that is also separate from the case 5 as shown in Fig. 1 of Koishikawa. Applicants submit that the assertion in the Office Action that extension portion 14a of oil pan 14 corresponds to a lid is has no reasonable basis. Portion 14a is clearly integral with oil pan 14, and is totally separate from case 5. Therefore, the assertion in the Office Action that lid (14) is detachably coupled to the connection (59, 62), which is formed in a sidewall of the case member (5), is

completely unfounded. Thus, Applicants submit that the rejection is improper. If the Examiner persists with the contention that Kato shows the elements of the claimed invention, a more thorough and concise explanation of Kato in terms of the present invention is respectfully requested.

The following respond to the rejection as best it can be understood.

Koishikawa describes an outboard engine structure for accommodating a catalytic converter. The outboard motor includes an engine mount case 4 and an extension case 5 (lower unit). An oil pan 14 is mounted onto the lower surface of the engine mount case 4, within the extension case 5, by fastening the peripheral edge of its upper end of the oil case 14 with bolts 54. A catalytic converter 16 is mounted to an extension 14a of the oil pan 14, which is integral with the oil pan. Since the extension is integral to the oil pan 14, the catalytic converter is firmly supported by the engine body case 6.

In the Office Action, the lower extension case 5 is alleged to be equivalent to the case member of the claimed invention, and the extension 14a of the oil pan 14 is considered to be the same as the claimed lid. However, extension 14a is integral with the oil pan 14, and cannot be considered the claimed lid. Furthermore, the oil pan 14 is described as being mounted to the engine mount case 4 and not coupled with the lower extension case 5. Therefore, even assuming *arguendo* that the pieces were similar, the configuration of Koishikawa is still different from the claimed invention. Moreover, there is no opening in a side-wall of lower extension case 5 that forms part of the exhaust passage, and which is covered by a lid. Thus, Applicants submit that Koishikawa fails to show or describe each and every element of claims 1-6. Accordingly, Applicants request that the rejection be withdrawn and claims 1-6 be allowed.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not timely filed, the Applicants respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account No. 01-2300.

Respectfully submitted,

Arent Fox Kintner Plotkin & Kahn, PLLC



Brian A. Tollefson
Attorney for the Applicants
Registration No. 46,338

Customer No. 004372

1050 Connecticut Avenue, N.W.
Suite 400
Washington, D.C. 20036-5339
Tel: (202) 857-6000
Fax: (202) 638-4810
BAT:klf
Enclosure: Marked-Up Copies

Mark d-up Copy of the Amended Paragraphs of th Specification

In the specification, the first full paragraph of page 11 is amended as follows:

As can be seen from Fig. 2, the oil case 41 is integrally provided with an oil pan 41₁, and a suction pipe 47 provided with an oil strainer 46 is accommodated in the oil pan 41₁. An exhaust passage-defining member 48 is coupled to a rear surface of the [engine] oil case 41, and an exhaust gas expansion chamber 49 is defined in the extension case 42 through a partition wall 42₁.

Marked-up Copy of the Replacement Abstract**ABSTRACT OF THE DISCLOSURE**

A split face [48₁] of an exhaust passage-defining member [48] is coupled to a split face [41₂] provided at a rear portion of an oil case [41] interposed between an engine block [11] and an extension case [42]. A main exhaust gas expansion chamber [e₃] and a subsidiary exhaust gas expansion chamber [e₇] are defined between the exhaust passage-defining member [48] and the oil case [41], so that an exhaust gas supplied from a first exhaust passage [e₁] in the oil case [41] is discharged into a second exhaust passage [e₅] in the oil case [41] via the main exhaust gas expansion chamber [e₃]. A portion of the exhaust gas in the main exhaust gas expansion chamber [e₃] is passed through a communication bore [e₆] and the subsidiary exhaust gas expansion chamber [e₇] and discharged from an exhaust outlet [e₈] into the air. [Thus, the exhaust gas expansion chambers e₃ and e₇ can be exposed for the maintenance only by separating the exhaust passage-defining member 48 from the oil case 41 without disassembling of the oil case 41, leading to a remarkable enhancement in maintenance property.]

MARKED UP COPY OF THE AMENDED CLAIMS

1. (Amended) An exhaust passage structure in an outboard engine system, in which at least a portion of an exhaust passage means is integrally formed in a case member (41) having a drive shaft (50) accommodated therein for transmitting in driving force from an engine (E) to a propeller (52),

[characterized in that] wherein openings (e_2 , e_4) of said exhaust passage means are defined in a generally upwardly and downwardly extending sidewall of said case member (41) which is disposed under an engine block (11), and an exhaust passage forming an exhaust silencing portion is defined between said case member (41) and a lid (48) which is detachably coupled to said sidewall of said case member to cover said openings (e_2 , e_4).

3. (Amended) An exhaust passage structure in an outboard engine system in which a catalytic converter (72) for purifying an exhaust gas discharged from an engine (E) is mounted in an exhaust passage for guiding the exhaust gas,

[characterized in that] wherein at least a portion of the exhaust passage is integrally formed in a case member (41) which is disposed under an engine block (11) to accommodate [having] a drive shaft (50) [accommodated] therein for transmitting a driving force from the engine (E) to a propeller (52); a connection into which said exhaust passage opens is formed in a side wall of said case member (41); and said catalytic converter (72) is disposed in a space surrounded by the case member (41) and a lid (48) detachably coupled to said connection to permit the exhaust gas to flow.

6. (amended) An exhaust passage structure in an outboard engine system in which a catalytic converter (72) for purifying an exhaust gas discharged from a 4-cycle engine (E) is mounted in an exhaust passage for guiding the exhaust gas, [characterized in that] wherein at least a portion of the exhaust passage and an oil pan (41₁) for [re]storing a lubricating oil for the engine (E) are integrally formed in a case member (41) which is disposed under an engine block (11) to accommodate [having] a drive shaft (50) [accommodated] therein for transmitting a driving force from the engine (E) to a propeller (52); a connection into which said exhaust passage opens is formed in a sidewall of said case member (41); and said catalytic converter (72) is disposed in a space surrounded by said case member (41) and a lid (48) detachably coupled to said connection to permit the exhaust gas to flow.